

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 June 2004 (03.06.2004)

PCT

(10) International Publication Number
WO 2004/045385 A2

- (51) International Patent Classification⁷: **A61B**
- (21) International Application Number:
PCT/US2003/037099
- (22) International Filing Date:
20 November 2003 (20.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/427,712 20 November 2002 (20.11.2002) US
Not furnished 19 November 2003 (19.11.2003) US
- (71) Applicant: **UNIVERSITY OF PITTSBURGH - OF THE COMMONWEALTH SYSTEM OF HIGHER EDUCATION** [US/US]; 200 Gardner Steel Conference Center, Thackeray and O'Hara Streets, Pittsburgh, PA 15260 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **SABA, Fawzi, Samir** [CA/US]; 230 North Craig Street, Apt. 701, Pittsburgh, PA 15213 (US).
- (74) Agents: **CARROLL, Peter, G.** et al.; Medlen & Carroll, LLP, Suite 350, 101 Howard Street, San Francisco, CA 94105 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **A DEVICE AND METHOD TO DISCRIMINATE BETWEEN SUPRA VENTRICULAR TACHYCARDIAS AND VENTRICULAR ARRHYTHMIAS**

(57) Abstract: This invention provides a method to discriminate between ventricular arrhythmia and supraventricular tachycardia by detecting an earliest arriving electrical signal following antitachycardia pacing. Also disclosed is an implantable cardiac defibrillator that is capable of simultaneous atrioventricular anti-tachycardia pacing bursts and detecting an earliest arriving electrical signal. The discrimination capability reduces the incidence of inappropriate shocks from dual-chamber implantable cardiac defibrillators to near zero and provides a method to differentially diagnose supraventricular tachycardia from ventricular tachycardia.